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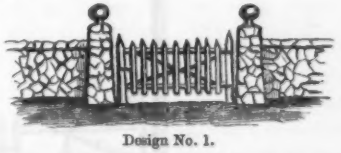
GATEWAYS AGAIN; AND RURAL CARPENTRY.

On turning back to the Horticulturist for March—I trust the reader preserves a file (as he certainly should do)—he will perceive, from the drawing of my friend Lackland's grounds, that he has need of three principal gateways—a small one for the footpath, being the entrance nearest to the village; a larger one for his drive, and a third opening, for his grass field. This last he will not have very frequent occasion to use; for that reason the gateway should not be very striking, or seem specially to invite entrance. Supposing that the occupant has availed himself of the old walls about the premises to build a substantial stone fence along a considerable portion of his front, I should advise that he mark this field entrance by two substantial columns built of the same material, and place between them a gate or movable panel of fence, constructed of cedar poles, or such other homely or lasting wood as may be most available.

I give a rough drawing of what I would propose.



Design No. 1.

I think that every one will admit that these columns have a tasteful effect, and add largely to the architectural character of the wall. And it is a great mistake to suppose, as many do, that such columns require hammered stone, or that it is requisite that they be laid up in mortar, and by an adept in masonry. All that is required is, that stones carrying fairly-developed angles should be laid aside for its construction—that the face of the column should project three or four inches from the surface of the wall in order to mark distinctly its faces, and that it be bound in firmly with such long

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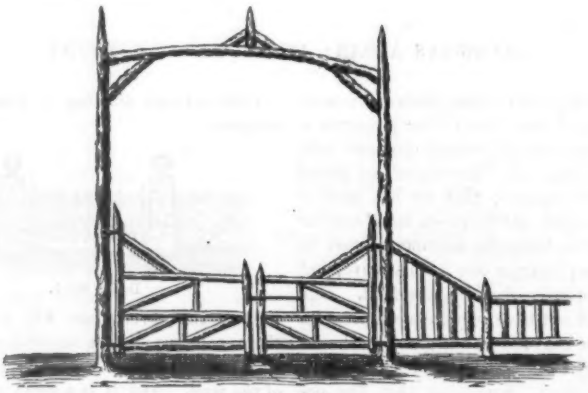
stones as are available. A boulder sufficiently round to crown the structure may be found in almost any rod of old country wall; and if it be well covered with lichens, so much the better. The great error in such attempts is in attempting too great nicety, which by contrast with the homely farm-work around it, offends more than it gratifies. In humble art, as well as in the highest art, there must be keeping.

But though finical nicety is to be avoided, and such hammering out of faces, as to increase largely the expense, and defeat the economy which should declare itself unmistakeably in all rural decoration, there should be no sacrifice of solidity. A column that will not stand for years had better never be built.

The country wall layers, ordinarily are indisposed to attempt such work, either doubting their own capacity, or considering it an encroachment upon the province of the mason. The consequence has been, in my own experience, that of some half-dozen or more which stand here and there about the fields at Edgewood, every one has been laid up with my own hands; and I may aver, with some pride, that after eight or ten winters of frost, they still stand firmly and compact. One only has lost its capping boulder, which certain errant boys could not resist the temptation to tumble off, that they might watch it's roll down a pretty declivity of an hundred rods, or more. I wish I had no more grievous charges to bring against errant boys.

For the entrance to the drive-way, supposing that my friend Lackland has plenty of cedar at hand, I give another design:



Design No. 2.

And I have this much to say in favor of it, that a similar one was erected at Edgewood nine years since, and its gates have swung back and forth a dozen times a day without, as yet, a single hammer's stroke in way of repair.

The dotted lines upon the right half of the gate indicate two half-inch iron rods which were passed through and fastened by a nut upon the longer upright sappling. Once or twice it has been necessary to give this nut a turn or two with the wrench, and this completes the tale of the attention it has required.

The first panel (and part of the second) of the fence to which it is attached, is given to show its relation to its surroundings, and the perfect simplicity of detail which belongs to it. The posts are firm and cannot swag. The gates are light—perfectly braced, and held in place by the iron rods which pass through them. They bid fair to last until the sap portion of the wood (cedar) is fairly rotted away. The three

horizontal arms are inserted with tenons; the braces are fitted only with the gouge, and made fast with wire nails. And here I wish to enter a plea for the wire nails, used all over the continent of Europe, but, as yet, little known with us; though, I believe, they are to be found in the larger hardware shops of New York. The advantage of them is, that they can be driven without splitting the wood—that they can be clenched effectively, and—what is of importance in light work—they add very little to the weight. For the construction of interior rustic work of twigs and bark, they are invaluable. They may be found of all sizes, from that of a cambric needle (and a half inch in length) to that corresponding to our "ten pennies," and lighter by two-thirds than these.

Design No. 3.

The third gate (No. 3) is equally simple, and, in way of ornamentation, has only its little rooflet. The design represents this as of equal width with the gate; but a somewhat better effect may be secured by an extension of the roof some six or eight inches on either side, in which case, of course, the posts must be cut off even with the ridge, and finials of cedar sticks adjusted at either end. This bit of roof over the gateway gives not only the hospitable air, which I remarked upon in the previous paper, but serves to protect the rustic work from the weather to such a degree that the bark will hold fast for double the length of time. In all such work, great annoyance is given by an insect which devours the sapwood under the bark, thus loosening the latter, and filling it with an ugly yellow powder. I have observed, in my own experience, that the ravages of this insect are much more decided and constant upon cedar cut in the winter than upon such as has been cut in the growing season of the year. The fact, however, may be accidental, and I must confess utter ignorance of the habits and tastes of this disagreeable grub.

The virtue of all such rustic work as I have commented upon lies in its exceeding simplicity, joined to great serviceableness. Home repairs do not tell badly on it; the joints need not be arranged with mathematical precision; the materials are near at hand and inexpensive; the creeping vines cling to it lovingly; it wears age with a veteran sturdiness.

I am by no means prepared to say that my friend Lackland will adopt my views on this head. I suspect that his country or city joiner, when confronted with the hints I have thrown out in these gate sketches, (they are really intended for nothing more than hints) will shake his head doubtfully, and lay before my friend some stupendous affair of carpentry, with an infinitude of mouldings, which, to his eye, is vastly finer. And I shall expect Lackland to yield to the charm of the rectangular elevations that are set before him; or, if he absolutely insists upon the working up of what stray cedars, or other wood, may be about the premises, I shall expect his carpenter to make such a bugbear of the exuding pitch, and of the impossibility of bringing his square and his guage into requisition, and (if he goes on), to keep so resolutely by a determination to counterfeit, as far as possible, all the mouldings of his joiner work, that he will construct a cumbrous affair, at such great cost of labor, as will disgust my friend Lackland, and at such cost of simplicity as will disgust every tasteful observer.

What then? There can be no doubt of the possibility of working this unruly material into tasteful forms, that shall have practi-

cal and economic uses; but in the ordering of this matter, as in the ordering of a great many others connected with rural life, if the proprietor can put no zeal into his intention, and has no eye for the charms of homeliness, let him abandon the pursuit. A good fence of white pickets, with gate to match, will keep the pigs out, and the young Lacklands in.

Edgewood, Sept. 1865.

GREEN-HOUSE PLANTS AND NO GREEN-HOUSE.

BY EDWARD S. RAND, JR.

WHILE almost every house in the country has its garden, comparatively few have a green-house, and yet every garden must depend much upon the green-house for its summer display.

Hardy perennials and annuals, though most desirable and comprising many beautiful and popular plants, do not fill every need, and we are driven to seek the aid of the numerous family of bedding plants for the adornment of our garden. In addition to these there are many green-house plants which add much to the attraction of the garden, if grown in pots, and judiciously interspersed here and there, either by sinking the pots or by placing them at prominent points, such for instance as turns in the walks, the centre of round beds, or the top of mounds. Now if we have a green-house, it is easy to have these plants and to winter them without trouble, but a green-house is a luxury which few can afford, and the object of our article is to show how we can produce, in a great measure, the same results without its aid.

Premising now that the object of a green-house is to merely winter plants for summer blooming, we may attain the same end by the use of means which are within the reach of all; these are the cellar and the cold frame. The general use of the former is for wintering plants which will not bear frost, of the latter for plants which will bear a moderate degree of frost, but which suffer or die from the effect of the winter's sun.

THE CELLAR.

Almost every house has a cellar, and yet the great proportion are unfit for wintering plants. A good dry, light, frost-proof cellar is as desirable a part of a house as a dining-room or parlor, and yet the cellar is generally a damp, low, ill-ventilated, dirty apartment, unfit for every purpose for which it should be adapted. The effect of such a cellar upon the atmosphere of the house cannot be other than hurtful, and thus deleterious to the health of the inmates, (this consideration is, however, aside from our subject) and for wintering plants they are useless, for no plant would survive a winter in such a place. A cellar for plants should be at least ten feet from floor to ceiling; this will generally be quite deep enough to be frost-proof. The floor should be either clean gravel or cemented. If the location is damp, deep trenches should be dug all around and filled in with fine stones to draw off all water, and these trenches should, if possible, communicate with a blind drain that all water may be carried off. Light should be afforded from windows on the south, east or west, there should be no opening on the north; these windows should be hinged at the top so as to afford free ventilation if desired. The cellar walls should be pointed; the ceiling may or may not be plastered; it is well to whitewash the walls. If there is a furnace in the cellar it is best to brick off a portion for the plants, as the constant heat would excite the plants to growth; and sufficient heat in a cold night can always be afforded by leaving the door open between the two parts. In building, if possible, use only stone or brick for all portions below ground.

PLANTS FOR THE CELLAR.

These are mostly hard wooded plants, succulents and bulbs.

Soft wooded and stove plants seldom

succeed, the former continuing to grow and exhausting themselves in the production of weak branches which there is not light enough to ripen, and the latter dying for want of moisture; or should that be supplied, damping off for want of sufficient heat. We must not expect our plants to give us flowers, or even to grow, the main object of the cellar is to preserve through the winter, our plants for summer decoration; our aim should be to keep the plants as nearly in a state of rest as possible, and if we can, in the spring, take them out in as good condition as they were when we put them in in the autumn our cellar is a success.

Plants which are thus allowed a season of rest, grow with greater vigor during the summer, often doing better than those which have grown all winter in a green-house.

The winter treatment is very simple; once or twice a week the plants should be examined, any decaying leaves removed, and enough water given to prevent them from drying up. Different plants require different treatment, in this latter particular succulents need very little; once a month is sufficiently often for Cacti, Agave, etc.; but hard wooded plants, such as oranges, Indian fig, &c., may need water twice a week, and tender evergreens, such as Cupressus Lawsoniana, Yews, &c., need only sufficient to keep them from drying.

The temperature should range from 40° to 55° Fah; air should be given by opening the *sunny* window on clear warm days; care must be taken, however, not to chill the plants, and not to allow a cold draft to blow over them.

Agave Americana, the American Aloe or Century Plant. This in all its varieties is one of the stateliest and most effective plants for summer decoration.

It is of the easiest management, requires little water and may be placed in the darkest part of the cellar. The plants should have large tubs, and all suckers should be removed as soon as large enough, and potted to increase the stock; they are of slow growth and large plants are not common.

The variety with striped or variegated foliage is the most striking.

Yucca.—These plants, like the Agave, are of stately appearance, and give a tropical effect; their chief beauty is in the foliage, though the flower is showy. They require a similar treatment with the Agave.

Y. aloefolia grows about three feet in height; Y. angustifolia, two feet; Y. filimentosa is hardy. Yucca gloriosa, four feet; Y. superba, ten feet. The varieties with variegated foliage are desirable.

The flowers of all are greenish white, produced on a stem many feet high in a close panicle.

Auracaria.—The two species are A. imbricata, the Chili pine, and A. excelsa, the Norfolk Island pine; neither are hardy, but both can be easily wintered and are noble plants for summer decoration.

Rhododendron.—There are many varieties which are too tender to endure our winters. These, planted in tubs and wintered in the cellar, grow vigorously and bloom profusely. In the summer they should be set out in a shady place and not allowed to dry; in winter give only enough water to keep the earth damp.

Agapanthus.—In a previous article we have given directions for the treatment of this fine plant. Give it a light place in the cellar, and if possible, where it will have a little sun—water enough to keep it from drying up.

Hydrangeas.—These need but little care beyond seeing they do not dry up or damp off.

Oleanders, (Nerium).—These will be at rest; care should be taken not to excite them into growth.

Crape Myrtle, (Lagerstroemia).—Of the two species of this beautiful shrub, L. indica is the more common; L. speciosa is of more dwarf habit with rosy flowers. It should have rest in winter in the coolest part of the cellar; be re-potted when put

out in spring, (or it may be set in the border,) will grow vigorously all summer, and flower profusely in August.

Pomegranates, (Punica). — Treat as Oleanders. The double flowering varieties are very showy.

Orange and Lemon Trees, (Citrus).— Give as much light as possible. They often begin to grow in March and April, when they should, if possible, be removed to the parlor where they will bloom profusely. During the summer a piazza is a more suitable place for them than a full exposure, as the sun is apt to affect the foliage, turning the bright green to a dirty yellow.

Ficus Indicus, (India Rubber Tree).— Keep in the lightest and warmest part of the cellar—water moderately. This is a difficult plant to keep in good condition, the foliage often turning yellow.

Cycas revoluta, Sago Palm, (so called) —Water sparingly, and keep in as much light and heat as possible—if there is a part of the cellar very warm and light many of the palms, such as the various Zamias, Latanias, &c., may be wintered without difficulty.

These are but a few of the plants we may winter in the cellar. The care required to ensure success is trifling, and is well repaid by the summer beauty of the plants.

All cellar plants should be housed before the first sharp frost.

THE COLD FRAME.

This is a most important adjunct to a garden; there are many plants which we cannot have in full beauty without its aid, and many which are usually kept in a greenhouse, can, by this simple provision, be wintered with perfect success.

The cost is trifling, a few boards, nails and an old sash will give you all that is necessary. A larger outlay, however, is not thrown away. It is a good plan to construct the sides of masonry, stone capped with brick, and set deep enough to be below the frost line; lay a heavy wooden sill on this on which the sashes run.

These beds may be divided by brick partitions in larger or smaller compartments, and can be used for hot-beds or cold frames at pleasure. They are not very expensive when we consider their durability and the many useful purposes they may serve. A range of this kind in our own garden, sixty feet long, cost, (including excavating) a few years since, 125 dollars; but, at the present time, (Oct., 1865,) owing to the increased cost of labor and materials, such a bed could not be built for less than three dollars per running foot.

A cheap cold frame, which will answer every purpose for wintering plants, may be thus constructed: Choose two planks, each six feet long and running from 18 inches in width at the top to 12 inches at the bottom; at right angles to these nail two cross pieces at top and bottom of corresponding width with the width of the top and bottom of the sides, that is, the top piece 18 in. by 3 ft., the bottom 12 in. by 3 ft. We thus have the frame—on each side nail a strip of board projecting about an inch to hold the sash in place—our frame will then be 3 ft. by 6, which is the most convenient size, and will have a slope of six inches, which is necessary to carry off the rain. Choose a situation where the water will not stand in winter and set the frame close upon the ground, banking up the sides with earth firmly pounded down. If it is intended to winter the plants in pots the inside of the bed may be made hard—a thick layer of coal ashes makes an admirable ground to set the pots upon. If, however, the plants are to be set out on the frame, the bed must be of common garden loam.

The plants should be set on the bed about the middle of October, but the sashes should not be put on until the nights become very frosty. Water will not be needed, as usually at this season the ground is sufficiently moist; plants in pots may, however, require it.

On the approach of cold weather cover the plants with leaves, packing them close;

put on the sashes and cover these with a piece of matting, to prevent the sun from forcing the plants into growth, and leave all till spring. On the approach of warm days remove the leaves and water a little so the plants may start into a moderate growth before being transplanted to the garden. Care must be taken to protect from frost after the plants begin to grow. As a general rule, the first to the tenth of April is early enough to uncover cold frames.

Care must be taken not to winter field mice in the frames, where, if they once obtain a lodgement, they will destroy every thing in the frame.

PLANTS FOR COLD FRAMES.

In general, all the plants commonly classed as "half hardy," may be wintered in cold frames. We propose only to mention a few of these, however, which are particularly adapted for decorative purposes.

TRITOMA.—This is a genus of stately plants with liliaceous leaves and tall spikes of showy flowers. Although long since well known inhabitants of the garden, they have, within a few years, been prominently brought to notice and are now in great favor for planting in beds in lawns. They should be transplanted from the border to the frame about the latter part of October, and kept well covered with leaves. The different species differ but little in the color of the flowers, which in all are orange or scarlet tipped with yellow and green, but vary much in the season of bloom. With us, T. Burchelli blooms early in August, followed by T. pumila, T. glaucescens, T. uvaria and T. serotina.

CARNATIONS.—These should be layered after blooming, and about the last of September the rooted layers transplanted to the frame—the plants will become well established before the heavy frosts when they should be covered with a thick covering of leaves, the sash drawn on and left till spring; then transplant to the garden or bloom in the frame as may be desirable.

CHINA OR TEA ROSES.—This lovely family may be grown without a green-house, and planted out will give profuse summer bloom. After the severe frosts have killed the young growth take up the plants and "heel them in" in the frame, covering the roots well. Protect with leaves, and in the spring prune back to a few eyes and plant out for the summer.

The same treatment will ensure success with the Bourbon class and the more tender Perpetuals.

ANTIRRHINUMS.—Transplant in October, cover well and replant in May.

DIGITALIS or FOXGLOVE is often winter-killed; treat as antirrhinum.

PANSIES.—This favorite plant suffers much from a wet open winter, but may be successfully grown in a cold frame.

Sow the seed or root cuttings in August; transplant to the frame; uncover the plants about the first of April or earlier and they will soon be in bloom.

DAISIES.—Treat as Pansies.

CHELONE, PENSTEMON.—Treat as Antirrhinum.

HUMEA ELEGANS.—A most striking plant. A biennial requiring winter protection. The seeds should be sown in spring; transplant to small pots; winter in a frame, giving plenty of air when the weather is warm enough to prevent frost. Transplant to larger pots in spring, and so on till all the plants are old enough to bloom.

ZAUCHNERIA CALIFORNICA.—A pretty plant requiring to be kept rather dry in the winter frame. The fuchsia like flowers are very ornamental.

A cold frame is also useful for wintering autumn sown annuals, and may be put to many uses we have not enumerated.

A cellar and cold frame are both essential to the florist, and were we called to give up one, it would be difficult to tell which would be dispensed with.

Glen Ridge, Sept., 1865.

CULTURE OF THE ROSE.

BY F. PARKMAN, JAMAICA PLAIN, MASS.

POT CULTURE.

MANY of the ever-blooming roses cannot, in our climate, be cultivated in the open air without extreme precaution to protect them from the cold. To grow them most successfully the aid of glass is necessary. Many of the hardy perpetual roses also may be grown with advantage in pots, by which means their bloom may be prolonged into the early winter months, or they may be forced into premature flowering long before their natural season of bloom. The first essential in the pot culture of roses is, the preparation of the soil. Those of delicate growth, like most of the China and Tea roses, require a lighter soil than the more robust varieties, like most of the hardy perpetuals. A mixture of loam, manure, leaf-mould and sand, in the proportion of two bushels of loam to one bushel of manure, one bushel of leaf-mould, and half a bushel of sand makes a good soil for the more delicate roses. For the more robust kinds, the proportion of loam and of manure should be greater. In all cases the materials should be mixed two or three months before they are wanted for use, and turned over several times to incorporate them thoroughly. They are frequently, however, mixed and used at once. The best loam is that composed of thoroughly rotted turf. A very skilful English rose grower, Mr. Rivers, recommends the compact turf shaved from the surface of an old pasture, and roasted and partially charred on a sheet of iron over a moderate fire. We have found no enriching material so good as the sweepings from the floor of a horse-shoer, in which manure is mixed with the shavings of hoofs. It is light and porous, and furnishes, in decomposing, a great quantity of ammonia. For the more delicate roses it is particularly suited, while the stronger kinds will bear manures of a stronger and denser nature. The light black soil from the woods is an excellent substitute for leaf-mould; or, to speak more correctly, it is a natural leaf-mould in the most thorough state of decomposition. Young and thrifty roses which have been grown during summer may be potted for the house in September. They should be taken up with care, the large straggling roots cut back and all bruised ends removed with a sharp knife. The ends of the branches should also be cut back. They may then be potted in the compost just described, which should first be sifted through a very coarse seive. The pots must be well drained with broken crocks placed over the hole at the bottom. Care must be taken that the pot be not too large, as this is very injurious. A sharp stick may be used to compact the soil about the roots, and from half an inch to an inch in depth should be left empty at the top to assist in thorough watering, which is a point of the last importance.

When the roses are potted, they should be placed in a light cellar or shed, or under a shady wall. They must be well watered, and it is well to syringe them occasionally. In a week or two they will have become established, and may then be removed to a green-house without fire and with plenty of air, care, however, being taken to protect them from frost at night.

The roses so treated are intended for blooming from mid-winter to the end of spring, and we shall soon speak further of them under the head of forcing.

A great desideratum is the obtaining of roses in the early part of winter. This may be done by growing ever-blooming roses in pots in the open air during summer,

plunging the pot in the earth and placing a tile or brick beneath it to prevent the egress of roots and ingress of worms.—Towards the end of August, cut off all the flowers and buds, at the same time shortening the flower stalks to two or three eyes. Then give the roses a supply of manure-water to stimulate their growth. If they are in a thrifty condition, they will form new shoots and flower-buds before the frost sets in, and may then be removed to a cold green-house, where they will continue to flower for several months.

FORCING.

"Forcing" is the very inappropriate name of the process by which roses and other plants are induced to bloom under glass in advance of their natural season. We say that the name is inappropriate, because one of the chief essentials to the success of the process, consists in an abstinence from all that is violent or sudden, and in the gentle and graduated application of the stimulus of artificial heat.

Roses may be forced in the green-house, but not to advantage, because the conditions of success will be inconsistent with the requirements of many of the other plants. The process is best carried on in a small glass structure made for such purposes and called a forcing pit.

A pit ten or twelve feet long and eight or ten wide will commonly be large enough. It may be of the simplest and cheapest construction. In a dry situation there is advantage in sinking the lower part of it two or three feet below the surface of the ground. The roses may be placed on beds of earth or wooden platforms, so arranged as to bring the top of the plants near the glass, and a sunken path may pass down the middle. The pit may be heated by a stove enclosed with brick-work, and furnished with a flue of brick or tile passing along the front of the pit and entering the chimney at the further end. The lights must be moveable, or other means provided for ample ventilation, and, if these are such that the air on entering will pass over the heated flues and thus become warmed in the passage, great advantage will result. A pit may be appended to a green-house, in which case it may be heated by hot water pipes furnished with means of cutting off or letting on the water.

The roses potted for forcing as directed in the last section should be kept in a dormant state till the middle of December. A portion of them may then be brought into the pit and the young shoots pruned back to two or three eyes. The heat at first must be very moderate, not much exceeding forty-five degrees in the daytime; and, throughout the process, the pit should be kept as cool as possible at night, great care, however, being taken that no frost is admitted. With this view the glass should be covered at sunset with thick mats.—Syringe the plants as the buds begin to swell, and lose no opportunity to give air on mild and bright days. Raise the heat gradually till it reaches sixty degrees, which is enough during the winter months, so far as fire-heat is concerned. The heat of the sun will sometimes raise it to seventy or eighty degrees. Syringe every morning, and, if the aphis appears, fumigate with tobacco, then syringe forcibly to wash off the dead insects. As the plants advance in growth they require plenty of water, and as the buds begin to swell manure-water may be applied once or twice. When the buds are ready to open the pots may be removed to the green-house or drawing-room, and another supply put in their place for a second crop of flowers. When the blooms are faded the flower-stalks may be cut back to two or three eyes, and the plants placed again in the forcing-pit for another crop. This, of course, is applicable to ever-blooming roses only.

The most common and simple way, however, of obtaining roses in winter is, to grow them on rafters in the green-house. Some of the Noisette, China and Tea roses thus treated, will furnish an abundant supply of excellent flowers. By pruning them at dif-

ferent periods during the summer and autumn, they will be induced to flower in succession; since, with all roses, the time of blooming is, to a great degree, dependent on the time of pruning.

Roses potted in the manner described for forcing, may also be brought into bloom in the sunny window of a chamber or drawing room. They will bloom much better if allowed to remain at rest in a cool cellar for a month or two after potting.

PROPAGATION OF THE ROSE.

There are five modes of propagating the rose; by layers, by cuttings, by budding, by grafting, and by suckers.

PROPAGATION BY LAYERS.

This is, perhaps, for the amateur, the most convenient and certain method. The best season for layering is the summer, from the end of June to the end of August, and, for some varieties, even later. The rose which is to be multiplied should be in a condition of vigorous growth. Loosen and pulverize the soil around it, and, if heavy and adhesive, add a liberal quantity of very old manure mixed with its bulk of sharp sand. The implements needed for the operation are a knife, a trowel and hooked wooden pegs. Choose a well ripened shoot of the same season's growth and strip off the leaves from its base a foot or more up the stalk; but, by all means suffer the leaves at the end to remain. Bend the shoot gently downward with the left hand and insert the edge of the knife in its upper or inner side six or eight inches from its base, and immediately below a bud. Cut half way through the stem, then turn the edge of the knife upward and cautiously slit the stem through the middle, to the length of an inch and a half, thus a tongue of wood with a bud at its end will be formed. With the thumb and finger of the left hand raise the upper part of the stem erect, at the same time by a slight twist turning the tongue aside, steadying the stem meanwhile with the right hand.—Thus the tongue will be brought to a right angle or nearly so with the part of the stem from which it was cut. Hold it in this position with the left hand, while with the trowel you make a slit in the soil just beneath it. Into this insert the tongue and bent part of the stem to a depth not much exceeding two inches. Press the earth firmly round them and pin them down with one of the hooked pegs. Some operators cut the tongue on the lower or outer side of the stem; but this has a double disadvantage. In the first place, the stem is much more liable to break in being bent, and in the next place, the tongue is liable to reunite with the cut part and thus defeat the operation. When all is finished, the extremity of the shoot should stand out of the ground as nearly upright as possible, and should by no means be cut back, a mistaken practice in use with some gardeners.

In a favorable season most of the layers will be well rooted before the frost sets in. If the weather is very dry there will be many failures. Instead of roots a hard cellular substance will form in a ball around the tongue. In the dry summer of 1864, the rose-layers were thus "clubbed" with lumps often as large as a hen's egg, but cases like this are rare.

In November, it is better in our severe climate to take up the rooted layers and keep them during winter in a "cold frame," that is a frame constructed like that of a hot-bed without the heat. Here they should be set closely in light soil to the depth of at least six inches and covered with boards and matting, or they may be potted in small pots and placed in a frame or cellar.

Layers may be made in spring from wood of the last season's growth; but laying the young wood during summer, as described above, is much to be preferred.

THE BIG TREE OF MONMOUTH.

BY G. P. DISOSWAY.

HERE I am, ruralizing for a short time in this rich region of New Jersey, unsurpassed for its cultivation and fertility. No one knows what a beautiful world he lives in, unless at this summer moment, he leaves our great city, with its noise, atmosphere, confined streets, and narrow lanes, for the country which GOD made. Man built the former.

Well does an old author say, "Who can ever fully express the pleasures of a country life? with the various delights of fishing, hunting, and fowling, with guns, greyhounds, spaniels, and several sorts of nets. What refreshment it is to behold the green shades, the beauty and majesty of the tall and ancient groves; to be skilled in the planting and training of orchards, flowers and potherbs, to temper and allay these harmless employments, with some innocent and merry song, to ascend sometimes to the fresh and healthful hills; to descend into the bosom of the valleys, and the fragrant dewy meadows; to hear the music of the birds, the murmer of the bees, the falling of the springs, and the pleasant discourses of the old ploughman, these are the blessings which only a countryman is ordained to, and are in vain wished for by the denizens of smoking cities; they are, indeed, the sights and sounds that give delight, but hurt not."

The whole face of the country now wears a most lovely appearance, the corn, here most abundant, exhibiting its ripening ears, the meadows are mowed and cleared off, and, in many fields, the clover still stands in all its luxuriance of red flowers. During this month the "green-robed senators of the mighty woods," as the old trees have been fitly called, are clothed in all the beauty of their summer array, and those who wish to know what the gloom and silence of a full-leaved forest is, should penetrate its shades now, when the whole scene is shadowed with the deepest summer verdure. There they will see the graceful forms in which the dark masses of foliage hang, with the beautiful effects of light and shade among the branches. The pale gold of the woodbine, the trailing blossoms of the bramble, mingling with the drooping crimson of the foxglove, throw their fine masses of color over the green underwood; and at times you will hear the lowing of the cattle amid the deep shades, or the jingling of the sheep-bells, farther-off sounds that come like cheerful voices amid the solitude and silence of the forest. In such a spot no sensible, thinking man or woman need pine for any other companionship, for a sympathy with all that is gentle or beautiful in NATURE betokens a contented mind.

The forests, from time immemorial, have been the theme of praise and song, and to this day the "sylvan solitude" posesses the magic spell of romance. And what can be compared to the forest—Natures own sanctuary? The noble columns rising boldly upwards unite together their airy arches, and the passing wind, like a distant hymn, murmers in the silence. From the moss and flowers is shed a balmy freshness, while dew-drops, leaves, and sunbeams quiver through the branches, conducting the mind into the realm of wonders. Such is the summer forest—the silent retreat of solitary thought.

But here, each single tree is also a shape full of life and meaning. The rose bush beside the cottage, the willow near the fountain, or hanging mournfully over the hillock above the silent grave, do not these give such spots their peculiar charm and consecrate their history? Thus delineated the trees have a marked character, no longer the body which a botanist merely dissects, or a mere study in natural history, but a contemplation, leading and engaging the mind and the affections.

As the most perfectly developed animals have some decidedly marked type—a real *personality* of their own—just so, to a certain extent, may it be remarked of the greatest number of trees. Each one may be characterized by some peculiarity—it has life. Very different is the aspect of the oak on the mountain from the oak in the valley; or the birch beside the dashing torrent and the calm lake. A clump of trees, or a tree standing alone, or associated with others, all present a scale of the most varied moods.

I have indulged in these associations and reflections from a visit to the remains of the old tree of Monmouth, New Jersey. It stood upon the fine farm of the Rev. G. C. Schanck (Marlboro'). The dominie I found to be a good naturalist, with a cabinet, and fond of this delightful study, as every good man should be. From him I learned the particulars of this forest monarch, and hence they are authentic. It grew near his residence, and this *tulip tree* was surpassed in size by only one tree this side of the Rocky Mountains, and that was the *Elm* recently growing by the bank of the Genneseo River, upon the late General Wadsworth's lands. It was said to have measured thirteen feet in diameter. The Monmouth tree stood upon the most elevated part of an open field unsheltered since the original forests were cleared away, probably more than 150 years ago. For a very long time it remained alone in its majestic strength and glory. The older inhabitants assert that formerly a similar one grew near it, but, struck by lightning, died.

A few years ago, this gigantic tree exhibited a vigorous growth with its large tulip-shaped flowers and green folinge. The trunk, the limbs, and top were all of proportionate size, so as greatly to deceive the eye in regard to its real magnitude, until a near approach discovered its immense dimensions. It was cut down in April last, the trunk perfectly round and straight, and near the ground, much enlarged; its roots occupied a space of 52 feet in circumference, or a diameter of 17 feet 4 inches. Above, it slightly and gradually tapered to the limbs, measuring 28 feet from the lowest. At one foot above the earth its circumference was 34 feet 5 inches; three feet, 27 feet 4 inches; at six, 22 feet 19 inches; at eighteen, it was 20 feet around, averaging 32 feet in height, the tree divided into five branches, the larger measuring respectively 10, 12, 13, and 15 feet 9 inches in circumference. One of them extended 60 feet from the trunk and with the opposite branch made the distance of 106 feet. In another direction, the top measured 86 feet across. Its whole height reached about 110 feet.

The bark around the lower part of the trunk, or as far up as visitors could well reach, has been abraded, and marked with their initials or names, as they wished thus to hand them down to posterity. Above, the bark remained in its natural state rising in furrowed or convexated ridges, some four inches deep, and covered with thin, flat lichens, presented the appearance of having braved and stood the rains and storms of past centuries. Since cut down, the age of this great tree is ascertained to have been about 225 years. The central part of the trunk for about three feet in diameter was found to be decayed, but the rest perfectly sound. Its stump measured eleven feet through, and it required the work of one man for seven days to cut down this remarkable king of the forest, and the chips filled five wagon loads. An entire section of a foot in thickness, sawed from the bottom of the tree, was conveyed on a two-horse team to the college of New Brunswick, for its cabinet; but, like the Vicar of Wakefield's picture, when it reached the destination, the door was not high enough to admit the new comer. Wonderful tree! What reverend histories hover about it! for it has outlived generations of the red and the white man. Here it grew, when Hudson, in the year 1609, first anchored the *Half Moon* within Sandy Hook, not many miles distant, and here it flourished quite near by, during the bloody and patriotic

contest at Monmouth more than three-quarters of a century since. These gigantic fallen limbs and trunk now lying prostrate before me, seemed clothed in impressive thought. Even now some artist should portray its grand ruins before they are gone. This last monarch of the mountain and plain has been a giant hero, equipped and rejoicing to fight the battle of the clouds with the wild winds of heaven. But below, the ivy and honey suckle have climbed up and twined around its stem, whilst the blackbird and robin caroled fresh songs among its lofty branches. Long did it stand proud and green, and there was none like it, by which the reflective fancy could count so far back, the boundary marks of our history, but the ax, which in this day is wielded against all that is planted by nature, has not been withheld, and the old tulip of Monmouth has also fallen to rise no more!

Monmouth, N. J., Aug., 1865.

THE NEW ERA IN GRAPE CULTURE.—No. 3.

BY GEORGE HUSMANN, HERMANN, MO.

SUMMER PRUNING AND TRAINING.

This is one of the nicest operations in the vineyard, and one to which the old adage can be safely applied: "A stitch in time saves nine." Let us see; here extreme neatness and thorough work can be combined, with a great saving of labor.

This, your readers may think, is hard to do. Let me try to convince them of the contrary. Let us suppose the vine properly pruned in the fall, as it ought to be, and nicely distributed and tied to the trellis, as it should be early in spring. Let us further imagine the young fruit bearing shoots along the cane to have grown, say six inches; they will then show the young bunches or buttons, as some call them, from two to three on each branch; we will suppose the time to be two weeks before blossoming.

Now, reader, if you wish to reduce this to practice, follow me to the vineyard, to this five years old Concord vine; it has three principal arms distributed over, say eight feet of trellis, with numerous spurs on each. On each arm select one of the lustiest growing shoots, about two to three feet from the ground, which tie neatly to the trellis, and allow it to grow unchecked.

Take away all the shoots which show no fruit, rubbing them off clean, for we want no wasting of energy in surplus wood. All shoots which show fruit pinch off just above the last bunch of grapes, which you can easily do at this early time, with finger and thumb. In this way go over your whole vineyard, and my word for it, you will see the young bunches develop as fast again, than if you waited until after the bloom, as the old fogies do. Besides, bear in mind, the leaves are the lungs of the plants.

Pinching the shoots at so early a date, does not rob the plant of so many fully developed leaves as the old method; it enables you to look over your vine much easier, as the leaves do not obstruct the view; they are not tangled and interwoven with tendrils, and such pinching is only a gentle checking of the sap, leading it into the young bunch and the remaining leaves. If all the shoots are not developed enough, leave the small ones until you have gone over your ground, and in a few days go over them again, pinching the remaining ones. Do not allow more than one shoot out of each bud, as three large, well developed bunches are better than five small ones. Take off all the side shoots. After a week or so the laterals will have pushed on your fruit bearing branches. Go over them again, pinching all of them back to one leaf.

This will leave a young leaf opposite to each bunch of grapes, which will now develop rapidly, and serve as a conductor of sap to the young bunch. Leave the laterals on the cane you have selected for next years bearing, to grow unchecked, and as soon as the young cane reaches the top of your five foot trellis, pinch it off there, to force the laterals into stronger growth, for we want them for spurs to grow our fruit on next year. Keep them tied away from the fruit bearing arms, so as to allow *them* all the ventilation and circulation of air they can get, for this is all important to raise fine fruit. It should grow and ripen *in the shade*, but *well ventilated*, and the young leaves on its own laterals will shade it sufficiently.

In about a week more the laterals on the fruit bearing branches will have pushed a second time. Go through again, pinching back the young growth to one leaf, and your summer pruning is *done*, at a time when your old fogy vine dresser will just *commence;* will pull out his knife and cut back the already hardening wood to two leaves beyond the last bunch of grapes, when the branches are all interlaced with thin tendrils, and he will have to tear and slash the poor vine half to death, divesting it of over one half its leaves, and spending more time than you did in all your pinching. If, after this maltreatment, laterals should have the audacity to show themselves, he will tear them out by the root, often also taking the main leaf with it. And what is the consequence? His vines, after such treatment, will sicken, the leaves he has left will drop off prematurely, and the fruit ripen irregularly with a skin like leather, while yours, if treated as before indicated, will have plenty of air, plenty of young, vigorous foliage to shade the fruit, and will ripen with such a bloom on them, and so thin a skin, you would not think they were the same variety. Try both methods and report progress. I think you will follow my plan entirely the following summer.

This has been one of the most trying seasons for the grape we have ever had, and only the most hardy and healthy varieties have been able to pass through the ordeal. The vintage is now commencing, and in a month or two I will report in full on some seventy varieties I have in bearing. Suffice it to say, that Norton's Virginia, Concord and Hartford Prolific have a heavy crop, and the Catawba is almost a failure.

NAOMI RASPBERRY,

BY F. R. ELLIOT, CLEVELAND, OHIO.

HEREWITH I send you a drawing of Naomi Raspberry, a variety that originated some years since in this county, but has never been disseminated; but I learn from Charles Carpenter, Esq., of Kelly's Island, who, with the Messrs. McIntosh & Sons, of Cleveland, have most of the plants, that it will be for sale the coming fall or spring. The Naomi is probably a seedling from the Franconia, is quite hardy, requiring no protection in winter.

Canes, strong with numerous ateral branches when fruiting. *Wood*, brown, smooth, with occasional inconspicuous spines. *Leaves*, generally broad; lanceolate on the fruit branches about three by two and one half inches—very productive. *Fruit*, very large; roundish, slightly conical, or obtuse conical, hairs long. *Color*, bright rich red. *Flesh* firm and sprightly; a little acid until fully ripe, when it is rich and delicious: bears carriage well, even if left until fully ripe.

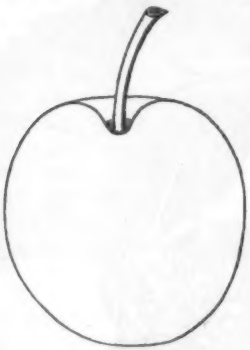
My drawing is from an average cluster, and designed to show the fruit in all stages of its growth.

NAOMI RASPBERRY.

FOOTE'S EARLY ORLEANS PLUM.

BY CHARLES DOWNING, NEWBURGH, N. Y.

THROUGH the kindness of the Hon. Ashael Foote of Williamston, Mass., I have received specimens of a new seedling plum raised by himself, from seed of Wilmot's Early Orleans, and although not so rich and luscious as some of the later varieties, it is of very good quality, and taking into consideration its other good qualities, earliness, hardiness, productiveness and freedom from



rot, it will no doubt prove a valuable acquisition to fruit growers, especially for early marketing. Description—size medium, as above, roundish, inclining to oval—without suture; a mere dot at apex; slightly flattened at base and apex; skin very black, covered with a blue bloom; stalk of medium length inserted in a large deep cavity; flesh greenish; moderately juicy, with a sweet rich pleasant flavor; quality "very good;" adheres to the pit which is oval and thin. Young wood, slightly downy, greyish. Tree, hardy, vigorous, spreading, very productive.

I give you Mr. Foote's letter dated July 31st:—

"The tree (which is from a pit of Wilmot's Early Orleans, was planted in the fall of 1851,) is now making its thirteenth annual growth, and by actual measurement is twenty feet high, with a spread of fifteen feet, and as a tree is a perfect model of symmetry and healthful luxuriance. It is also perfectly hardy, having never in this severe climate lost an inch of wood by frost, notwithstanding its vigorous growth.

It is now laden with its third successive crop of fruit, which has been on my table in perfection for at least a full week. Its product in 1864 was upwards of three bushels, all fair and perfect, whilst Imperial Yellow and Green Gages in the same garden were badly affected with rot. I suppose that at Newburgh this fruit would have been fully ripe by the 15th of July."

ASHAEL FOOTE.

NOTES ON THE AUGUST NUMBER.

PRUNING THE PEAR TREE.—It is always easier to criticise than create—but in grafting in a branch to supply any vacancy on dwarf Pear Trees, I have found side grafting in early spring to prove successful. I practice going over my trees early in April, and when a branch is wanted to fill up, I cut my graft from the tree and proceed to insert it where wanted by making a downward cut on the body of the tree, through the bark, and into the alburnum wood, then form the graft, wedge-shaped at the lower end, with two buds to grow, and insert it into the cut in body of tree; tie with bass matting and cover with a little wet stiff clay. After the graft has grown two or three inches, the bass string should be cut apart. Laying in a branch as directed by Du Breuil, is attended with nearly double the labor, and I have not found it any more successful. Every pear tree grower should learn to prune his own trees—it is almost,

if not quite, impossible to hire labor attended with a knowledge of vegetable physiology, and without that he who attempts pruning pear trees will, in nine cases out of ten, do more injury than good.

A Pig and a Cow.—Good advice where one has a fancy for pigs, but I confess I have no such fancy, and so far as a pecuniary gain my experience has been against rather than for the pig. For some years I kept pigs, feeding on weeds, sour milk, slops, etc., until the time of sweet apples, then fattening on apples, and ripening off with corn, but I found the money paid for my pigs, and the value of my apples and corn, at twenty-five cents a bushel, amounted to more than my pork would sell for when taken to market. I now practice a compost heap of my weeds moistened with slops, using occasionally a sprinkling of salt, and plaster paris (gypsum). I prefer it to the pig practice.

The cow is indispensable to comfort in the country, and all here said is but a tithe of what might be advanced in her favor. Aside from daily usefulness there is additional beauty added to every scene by some addition of active life in the landscape.

Water Plants.—Educate—educate, and so elevate and cultivate the mind that all of nature's creation may be understood and appreciated. Few of our water plants as yet are known to even those who claim to be amateurs, and still less to the masses of the people, Nymphæa odorata, Nelumbium luteum, and Nuphar advena are about all that are ever noticed or even known by name. Go on Mr. Rand and help to educate us both in the knowledge of the plants as well as the *simple* and *easy* way of growing them, for, believe me, nothing will be grown to any extent for its beauty alone, without it can be done at little trouble and expense.

Wine Making in New Mexico.—All and every information relative to grape growing and wine making is especially valuable to our people at this time, and we are much indebted to Mr. Knapp for this account.

Ferns, No. 2.—I have heretofore said my say on this subject.

Notes by T. T. S.—Practical experience thus related is always valuable. It is plain that the more and longer we cultivate, the higher and more artificial our systems, the more of insect life have we to contend with. In this relation of the Plum Trees is it the alkalies in the ashes that give extra vigor and health to the trees or—what? Some of our friends where this black knot has prevailed so long and so extensively, should give us an answer.

Grape Cuttings from History.—Will Mr. Reid oblige by telling us how old his Catawba vines are, what the soil in which they grow, and whether the mildew affected the leaf or fruits, or both, and if so, at what period?

Pleasure Grounds.—A good article, and the "sound advice" given is in one sense correct, but if the "genius" of one's immediate locality is without travel and study, better, before planting or cutting away of tree or shrub, send a distance and obtain the services of a man who has made the beautifying of nature his study and practice. I have in mind as I write a Landscape Gardener, so called, whose designs, one and all, embraced the same general features. It mattered not to him what the extent of the grounds, or the style of the house, he had a mass of trees and shrubs for the sides of the lot and a lawn in the centre. Again, as illustrative:—A gentleman employed an artist to mix colors to paint a cottage house, giving the body of the house and trimming, of course, different shades. This was, of course, as required, and so pleasing to all that in less than six months nearly every house, no matter what its architectural character, in the village was painted as near the copy as country painters were capable of mixing colors.

The New Era in Grape Culture.—Mr. Husmann here gives us a statement, show

ing that grape growing, provided we have the right soil, can be as successfully done by the poor man as by the rich. But there is one point I must take exception to in Mr. Husmann's article, and that is the putting into account the product, or moneys received from sale of plants, as part of the vineyard. That should be counted aside, for while we know that Catawba, Concord and other roots have, the past year, brought good prices, such cannot long continue, even new varieties that last year sold at $60 to $80 per hundred plants, are offered at from $10 to $15. Let us have the vineyard by itself and the nursery by itself, and then we will show that grape growing, on suitable soil, and in selected locations is one of the best and most profitable of occupations.

More Neglected Flowers.—This is right, give us more taste to cultivate the naturally beautiful plants of our own country, by showing our attention to them from time to time, so may we learn to appreciate home products as well as foreign importations.

Action of Metallic Salts, &c.—An interesting record, and as a matter of science we should like to see it continued, but would suggest that experiments should be made with plants, whose growing seasons were nearer akin than the present ones of Strawberry and Cauliflower—as that may have something to do with the matter. Again, we would like the experimenter to grow at same time separate plants, in pots, in same position of exposure, watering only with rain-water. I may be skeptical, but I do not consider, in matters of horticulture or agriculture, that any one experiment with one exposure is of much value.

Reuben.

HYBRIDS AND CROSS-FERTILIZATION.

BY J. M. MERRICK, JR., WALPOLE, MASS.

In an article upon Open Air Grape Culture, published in the *North American Review* for April, 1865, I made the following remarks about Rogers' Hybrid grapes, which I repeat here, because the genuineness of these so-called hybrids has been called in question, both before and after my paper was published:

"Mr. Rogers has given to the world no less than forty new grapes of different degrees of excellence; hybrids between several foreign kinds and a monstrous and uneatable variety of the *Vitis Labrusca* from the Salem woods. Some of the new comers have already taken their place in the small list of standard out-door varieties, and three or four of them, for healthy growth and excellence of flavor are almost unsurpassed. Some writers, indeed, maintain that they are *not* genuine hybrids, but simply seedlings of the native grape; but this notion is wholly untenable, and a glance at the following considerations will show in part the weight of the evidence that goes to prove them to be true hybrids:

If forty seeds of the wild grape be planted and as many seedlings obtained, one half of these seedlings will probably be barren; and of the other half nine-tenths will show no marked superiority to their parent. If forty fertile plants should be raised, all better than the parent vine, it would be little short of a miracle. Mr. Rogers has raised forty-four vines without getting one staminate plant, and the poorest among them is better than the average of fertile seedlings from the wild grape,—a result to be explained only by admitting a large infusion of the *Vitis Vinifera* in their composition.

Hybrids from two species which are very difficult to cross are usually very sterile, but these are not only genuine hybrids, they are also very fertile; and we have ob-

served in some experiments we are making, further to unfold their character, that the seeds from these hybrids, and especially from the number 19, germinate readily, and with much more certainty than the seed from the wild grape."

Mr. E. W. Bull, of Concord, in the last volume of the Massachusetts Agricultural, Reports; Mr. Fuller, in his Grape Culturist, and various other well qualified people, have pronounced these grapes simple seedlings from the native.

Whether Mr. Rogers' vines are hybrids or not, makes very little difference to purchasers, provided the grapes are good growers, healthy and desirable; but, as a scientific question it is of the utmost possible interest. I cannot admit that they are not hybrids until some one will point out the flaw in my argument above quoted.

In support of the theory that they are hybrids, we have,

1st—Mr. Rogers' own statement of his experiments in the HORTICULTURIST for 1858, in which the details of the hybridizing process are given, and which show that the experimenter took all resonable measures and precautions to have the pollen of the foreign kinds fertilize the native variety.

2d—The general character of the vines themselves, their peculiar foliage and manner of growth, and especially the striking and distinct shape of the buds of some numbers, and the appearance of the wood between the joints, which to many observers, ignorant of the names or pretensions of the vines, at once suggest a foreign grape.

3d—The character of the fruit.

It seems to me it does not require a very nice taste to find a flavor in these grapes distinct from the native, and they are certainly beyond all comparison, better than the average, or it might be said, better than the best seedling fruit from the wild vine in the first generation. I may add, that I have this day, September 3d, picked berries of the number 15, tolerably ripe and sweet, from a trellis where the Concords were not quite ripe, and the Delawares only a trifle more mature than the Concords.

4th—The great difference presented by the leaves of seedling vines which I have raised from number 19, considered by some the best of the series, goes a great way, in my opinion, towards showing that the parent of these seedlings was of a mixed origin.

Some of the leaves have all the marks of the pure native, (Labrusca) while others are of a delicate light green, pale underneath, without down, sharply serrated, and very foreign in aspect.

I know that no very sound theory can be built upon the looks of leaves alone without fruit, but I simply say that the leaves of my seedlings present greater difference of character than we should expect, in direct seedlings from a native vine.

The whole subject of hybridization and cross-fertilizing presents so many curious and apparently anomalous facts, that I permit myself to dwell a moment or two upon some of the most remarkable.

In the article in the *North American*, above alluded to, I remarked, "It is a curious, but admitted fact, that there are certain plants, as for instance some species of Lobelia, which can be far more easily fertilized by the pollen of another and distinct species than by their own pollen. Any one, says Darwin, can convince himself of the efficiency of insect agency, by examining the flowers of sterile Rhododendrons which produce no pollen, for he will find on their stigmas plenty of pollen from other plants." At the time the foregoing paragraphs were written, I had not read Darwin's later work, On the Fertilization of Orchids, a book containing detailed accounts of most patient and elaborate research, undertaken to throw some light upon a little understood class of plants, and which seem to prove, in the case of Orchids, that the various contrivances by which the ovulus are impregnated, have for their main object the fertilization of each flower by the pollen of another flower. It is impossible to give the details of the researches,

but the learned author thinks he has proved that there are at least twenty-four genera of Orchids, which could never be fertilized were it not for insect agency.

Now if Orchids and Rhododendrons can be shown to need the help of insects for perfect and successful impregnation, this may also be the case in a less degree with the genus Vitis, and then the great divergence of different seedlings from the same parent would not be so surprising. If any one objects to this view, the fact that the flowers of a fertile vine seem most admirably adapted for self-fertilization, he should recollect that no flower in the world *seems* so well calculated to fertilize itself as that of an Orchid, and yet it is certain that Orchids need extraneous help.

A curious and anomalous case of transformation of sex, or of mistake with regard to the sex of a vine, has lately come within my observation, and is so exactly the counterpart of a case mentioned by Darwin, that I cannot do better than present both to my readers.

Mr. E. W. Bull showed me, a while ago, a barren seedling grape vine raised by himself, and permitted to remain among the bearing plants, in accordance with a notion borrowed from Chaptal, viz: that it is advantageous to allow a few staminate vines to remain in a vineyard of seedlings, as they help to fertilize the others. For several years this particular vine blossomed in the spring, the "false blossoms" dropped off, and it remained the rest of the season a useless incumbrance. At last, one year a bunch of blossoms on this staminate vine set and perfected four grapes! A single well authenticated case like this gives our notions about dicecious plants a very rude shock. Most persons to whom I have mentioned this curious fact, content themselves with denying it, but to do this is to impeach the accuracy of an experimenter no less skillful and no less quick-sighted than Van Mons himself. Now for the other side of the matter. Dr. Darwin, in his researches, came across one genus of Orchids which wholly baffled all his attempts to fertilize it. It remained, as he says, the opprobrium of his work. He tried in various ways to effect impregnation without success, and was about to give up the matter as wholly inexplicable, when it occurred to him that although no instance of the separation of the two sexes was known in Orchids, yet that *Acropera* might be a male plant. A critical examination of the stigmatic surface, of the utriculi from the stigma, and of transverse slices of the ovarium, as compared with ovaria of other Orchids, all led to the inevitable conclusion that the *Acropera luteola* is a male plant. What, however, is very curious is, that no corresponding female form of this Orchid is yet known.

Here then are two cases, each the counterpart of the other; one in which a staminate plant bears fruit, another where a plant, concerning whose sex no doubt had been entertained, proves to be exactly the reverse of what it was long supposed to be. These facts should teach us to be cautious in pronouncing definitely concerning a doubtful form.

Having laid down my belief (in the May number of this journal) that the perfect grape, when we should get it, would prove to be an artificial hybrid, it gives me particular pleasure to quote, in concluding this article, the closing paragraphs of Darwin's book.

"It is an astonishing fact that self-fertilization (in Orchids) should not have been an habitual occurrence. It apparently demonstrates to us that there must be somesomething injurious in the process.

Nature thus tells us in the most emphatic manner, that she abhors perpetual self-fertilization.

May we not infer as probable, in accordance with the belief of the vast majority of the breeders of our domestic productions, that marriage between near relations is likewise in some way ihjurious—that some unknown great good is derived from the union of individuals which have been kept distinct for many generations?"

DISAPPOINTED HOPES.

BY "GLADIOLUS."

MESSRS. EDITORS: On a beautiful Sunday morning in this first of the autumnal months, I was invited by a friend to take a drive out into the country, and visit the estate of a gentleman of wealth and taste living in the town of Orange, Essex County, New Jersey. *Albeit* it is not my wont to devote the Sabbath to pleasure excursions, or to secular occupation, yet believing that a man may worship his God in the temple of nature, "not made by hands," and falling back upon the precept of our blessed Lord, that "the Sabbath was made for man, and not man for the Sabbath," I yielded to the temptation, and as the church bells were calling the people of God to the service of the sanctuary, I took my seat with two other friends (guests fresh from the land of Dixey), in the comfortable carriage of my friend, and drove out to the place of which I am now going to tell you. A short half hour carried us from the sound of church bells, and the heated abodes of city life to the rural retreat we visited; we entered by an unpretending approach, and upon alighting from the carriage were met by a son of the proprietor who, with the graceful manners of a true and cultivated country gentleman, escorted us to the mansion and welcomed us to the hospitalities of the house. Finding that we were on a newly made place of some eight years work, we were curious to inspect what art and labor, combined with taste and liberal expenditure, had achieved in the way of landscape gardening on an almost level piece of ground. The grounds, though of only some twenty-five acres, had been so treated as to give the idea and appearance of very much greater expanse. Open lawns over gently undulating surfaces, and without a visible fence extended from the rear of the mansion over a long stretch, and were bounded by a piece of natural woodland in the distance, which furnished a very beautiful background, and which when nature puts on her gorgeous fall livery must be amazing fine. These lawns were divided by belts of ornamental planting which, without confusing the scene, gave great variety and heightened the general effect. There were magnificent high hedges of Arbor Vitæ admirably clipped and kept, which screened off the garden and whatever it was intended to shut out of sight, or prevent being all taken in at a glance. Passing around one of these hedges we entered the fruit garden, and our eyes were regaled with a sight of luscious fruits of all kinds and in profuse abundance. Melons of rare shape and size, masses of pears of many varieties, among which the Seckle, queen of all, was seen in highest glory; native grapes in abundance, and representing the best of the new varieties. All indicated a liberal and well-informed proprietor. These were shown by our host with evident pride and conscious excellence; but he led us at last, and with a premonition of sad words to a vinery where his pride seemed to meet with a sudden and terrible reverse. "I take you in here" he said, "to show you a wreck!" and a wreck it surely was in every sense of the word. Picture to yourself, a fine structure got up in the best style, curvilinear roof, of some six years standing, and filled with noble old vines with stalks as thick as your arm, each well loaded with bunches, some of four or five pounds weight, just ripening, and the whole suddenly converted into a reeking mass of rottenness. Mildew—mildew—mildew—covering every leaf and every bunch; the ground underneath strewed with the filthy debris, and the whole house reeking with a nauseating, stifling atmosphere. "Well," we exclaimed, "this is cruel, perfectly cruel! enough to make a saint swear; 'tis the fault of your gardener, what has he been about—does he know anything of his business and duties, and if yea, why this abominable neglect?" Our own feeling was (being

somewhat of the pugnacious order) that if the vinery was our property we would just like to deliberately, and in cold blood, place in position a small piece of field artillery and open fire on the house, and blaze away until we had reduced the whole concern into the smallest possible fragments—and we so expressed ourself. We anathematized the gardener and heaped invectives on his devoted head. Then we began to investigate the facts of the case, and here is the first of all the present rigmarole. We present the case for your consideration with some of our own philosophy. It appeared that the house in question was a hot-house, furnished with pipes and the usual hot-water arrangement. It never had been known to fail in its annual crop of fruit: always considered as a success; but during the last winter, the plants had been laid down to rest, raised in the spring and the house treated only as a cold vinery. Everything went on well; a fine show of fruit, probably near a thousand pounds of grapes; and just as they were ripening this calamity overtook the house and overwhelmed everything in one big destruction. On hearing this statement we reconsidered our denunciation of the gardener, and began to reason on the subject, and look for causes beyond a gardener's neglect. The theory we elaborated was this:

1st. The house had always previously been a hot-house; the plants reared and cultivated year after year, on the forcing principle, under fire-heat: resulting from this a fixed habit in the plants as to their growth and fruiting.

2nd. This condition is suddenly interfered with: the fixed habit changed. The spring was cold and wet. The outside border being subjected to the cold rains and melting snows, and the plants inside missing the fire-heat had its effect upon the roots. The growing plants inside thus missing the fire-heat were rendered highly sensitive by the change to any morbific influence, and especially to the condition of the outside border. The shock was too violent, and consequently

3d. The plants were just in the condition favorable to the development of mildew which, when once began spread like wildfire, and the whole concern went up at once like the Southern Confederacy—one grand collapse.

Well, what do you think of our theory? We would add, *en passant*, that a second house to which a conservatory was attached shared the same fate, though not quite so bad. The little fruit that could be found to taste proved poor and insipid. We considered the case an interesting one, and thought that perhaps other gentlemen had met with just such wholesale disappointment. That a presentation of the case to you and your readers might call forth some valuable information, and with this intent we have indicted this letter descriptive of our Sunday drive. Hoping that our host whom we have left nameless may not look upon our report as impertinent or a breach of hospitality, and that it may be the means of calling forth some valuable contribution to the science of Horticulture from a source better informed than the writer.

STRAWBERRIES AGAIN.

The increasing interest manifested throughout the country in this most interesting branch of horticulture, has induced me to avail myself, if agreeable to you, of the use of your columns, to reply to the numerous queries propounded to me about my manner of cultivating this most delicious fruit. First—

SOIL.

The soil is a clay loam, clay rather predominating, sufficiently stiff to *bake*, when not well manured and cultivated. Second—

TIME OF PLANTING.

My bed was planted in the spring, but I usually plant more in August and September than any other season. My custom is

to plant at either season when I get ready. If planted in August or September a fair crop may be expected the following season. Third—

DISTANCE APART.

I invariably plant in *rows* and *never* in *beds*. I hold that the objections to planting in *beds* are so great and so palpable, that it will admit of no discussion whatever. My standard rule is to plant in rows three feet apart, and plants two feet in the row. I have found this close enough for every convenience of picking, cultivation, manuring, &c. Fourth—

RUNNERS.

"What do you do with the runners?" is almost a universal enquiry. We treat them as *weeds*, unless wanted for the increase of stock. Cut them off as fast as they appear, by any convenient process your own judgment may dictate; a light, sharp steel spade, or a scuffling-hoe, I have found the most practicable and expeditious. Fifth—

MANURES.

I use no other but barnyard manure, *composted* nearly one year, with an occasional topdressing of dry wood ashes. The soil is limed before the bed is planted at all. The object of composting is to destroy the seeds of grass and weeds, the bane of strawberry culture. The value of composted manures, in my estimation, is simply beyond computation. Let any one try it once.

In first preparing the ground I aim to use an *abundance* of manure. My theory is that plants that are expected to produce *fruit* must have something to *feed* upon. Sixth—

MULCHING.

I mulch in the Fall with clean straw, and leave it on through the Spring for the fruit to lie upon while ripening, to avoid the necessity of washing the fruit, only opening the mulch immediately about the crown of the plant. Seventh—

DURATION.

I prefer to have some new plantings coming in every season; but, by good management, I think, a bed may be continued in one place about three years. Eighth—

PRODUCT.

The total product of our bed, this season, was a fraction short of *five bushels* on the 37.50 part of an acre, making at the rate of 185 bushels to the acre. Ninth—

FLAVOR.

The "Albany Seedling" combines more good qualities in itself than any other one variety we know of. It has been pronounced by some as too acid. We have not found it so when properly ripened. Even that acid is pleasant and very healthy. Tenth—

GENERAL MANAGEMENT.

In conclusion, we would urge *clean* cultivation, principally by hoeing, and only plough or spade but once a year—viz., just *after* the crop of fruit is gathered.

WM. DAY,
Morristown, N. J.

—*New York Observer.*

EDITOR'S TABLE.

TO CONTRIBUTORS AND OTHERS.—Address all Communications, for the Editorial and publishing departments, to GEO. E. & F. W. WOODWARD, 37 Park Row, New York.

BACK VOLUMES OF THE HORTICULTURIST.—We would be greatly obliged to our subscribers, having back volumes that they are willing to dispose of, to send us a list and the cash price. We are prepared to purchase single volumes, or whole or partial sets. For the years 1854 and 1855, we have a small number of volumes. For 1856, we have 10 copies for sale, price $2, bound and post paid. All other volumes, from 1846 to 1863, inclusive, we would like to buy.

It is not often in the history of any publication, that its proprietors are in the market buying up its back volumes for cash; volumes that have been read and consulted for years, thumbed, shelf worn and musty they may be; but such this time is the case. As years roll on, as the love of Horticulture and Rural Arts increase, so steadily and surely increases the demand for Horticultural Literature, both of the past and present.

The croakers and grumblers of past years are especially invited to send in their back volumes. Those who could never see any good thing in the "HORTICULTURIST," and were always prepared with a hundred or more suggestions, how it could be made better, &c., will be sorry to know that each and every volume has been, and is to-day, a full representative of its cost, and that each subscriber has received his moneys worth to read it, to keep it, or to sell it.

AGRICULTURAL BOOKS.—We call the attention of our readers to our list of Agricultural, Horticultural and Architectural works, embracing all the late publications, with revised prices for the fall trade. We send these works by mail, post paid to all sections of the country, having postal communication. We put them up securely in strong wrappers, so as to carry safely. Our most distant readers can therefore get them in as good order and for the same price as if a personal call were made. In addition to the list published, we execute orders for the purchase of all classes of publications, and for Agricultural, Horticultural and Architectural supplies.

DIXON'S LOW DOWN PHILADELPHIA GRATES for burning wood and hard and soft coal. The best and cleanest open fire place known. No house should be without one open fire. We can supply all sizes of these grates at manufacturer's prices. Samples can be seen at this office, send for a circular. Prices range from thirty-five to sixty dollars, according to size and finish.

AGRICULTURAL AND HORTICULTURAL PERIODICALS.—Any of our readers who wish to add to their list, any of the publications on Agriculture and Horticulture, can do so through us. Specimen copies can always be seen at this office, or mailed on receipt of price.

WOODWARD'S COUNTRY HOMES.—This is a book of 166 rather small, but beautifully printed pages. It tells us how to build houses cheaply, elegantly, and so as to tend to make us healthy, happy, and to live a long time! Such a book has long been needed, and is well worth having. It is not all talk and guesswork, but its statements are confirmed by ample illustrations, showing the reader how his home will look inside and out, when he gets it constructed. With such a book as this at his command—and many others as helps—a man is a fool—he is very foolish, at least—to go on and build from his very imperfect knowledge of such business, and will be very likely to incur large and unnecessary expenses, and *not* have the house he desires when it is done. Most persons look at house building as they do at farming. Every body knows how to build a house, or manage a farm. "Why, it comes by nature, just as reading and writing did to Mr. Dogberry!" So they go on, and not one house in fifty, when it is completed, is what the owner intended to have.—*N. England Farmer.*

FINE GRAPE VINES.—Last Spring we received from J. F. Deliot, Esq., of Sing Sing, an assortment of fine grape vines, mostly of the new varieties. They were the finest one year old plants that we ever saw, and do credit to the propagator. A season's growth has shown the great superiority of good vines over the miserable attenuated specimens too frequently met with.

HORTICULTURAL ASSOCIATION OF THE AMERICAN INSTITUTE.—The lecture of Tuesday evening, May 10, was by PETER HENDERSON of Jersey City, on "The Mar-

ket Gardens of New-Jersey," in substance as follows:

The market gardens of New-Jersey are embraced in a half circle of ten miles from the City Hall, New-York. The land occupied by them is about 1,000 acres, and it is questionable whether there is an equal area anywhere else in the country so thoroughly cultivated, or with such profitable results. In many cases the returns are $1,500 per acre, and it is perfectly safe to say that the whole average is $1,000 per acre. But this high degree of fertility is only obtained by the highest cultivation, and it takes about three years to break in farm lands and bring them up to this high standard. The varieties of vegetables cultivated are few in number, and mostly different from those of Long Island, whose lands embrace a much greater extent, but are not so highly cultivated. The vegetables grown are principally cauliflowers, cabbages, beets, spinach, onions and lettuce for a first crop, followed by celery, horse-radish, thyme, sage and other herbs for a second crop, for to produce the above results the soil must be kept at work, and as soon as the Spring crops are off in July, the plow and harrow again invade mother earth, and she is planted with the Fall crop. The particular manner of cropping is something like this:

Cauliflowers, for instance, are planted out two feet between the rows and fifteen inches between the plants, setting lettuce between the rows, which is fit for market before the cauliflowers are large enough to be injured. The cauliflowers in turn are marketed the last of June or first week of July, when the ground is prepared and planted with celery in the following manner: After the soil has been well pulverized by plowing and harrowing, lines are struck out three feet apart, but no trenches are made as is usual in private gardens. The plants are set in these lines six inches apart, and the ground kept clean by the cultivator until September, when the plants are strong enough to allow the earth to be laid up against them by the plow, and the banking is completed with the spade. In private gardens the plants are often set on a level surface one foot apart each way, the ground kept free from weeds until the celery so covers it as to smother or keep them down. In its struggle for light, the celery stalks shoot up in a convenient form for blanching. This process is best performed by lifting the plants and setting them out in a cool cellar in sand about the middle of November. They are packed pretty close and the sand sifted in nearly to the tops of the plants. Grown in this way a plot 20x20 feet will give 400 plants—an abundance for any family from November to May. The variety best suited for this market is known as the French or Incomparable Dwarf.

Another feature peculiar to the Jersey market gardeners is the forcing and forwarding of early vegetables by hot-beds and cold-frames, immense numbers of which are used, some growers having upward of 2,000 sashes, principally for the forwarding of lettuce and cucumbers in cold frames. This frame is very simple, being two boards 9 to 10 inches wide, fastened to end boards six feet long, on which 3x6 feet sash are placed to any desired extent. The lettuce plants are set in them in March, eight inches apart, or 50 plants per sash. By the middle of May the lettuce is fit for use. As soon as a few heads are cut, seeds of cucumbers are sown in their places. They come up quickly and take the place of the remaining lettuce as it is removed. By this method any occupant of a city lot could find a corner for a sash or two, and with little trouble, provide lettuce and cucumbers at a time when stale ones which have passed through half a dozen hands could not be purchased at less than $1.50 per dozen.

Of the fruit market gardens in this section there is nothing to boast. There is not, to my knowledge, a single acre of strawberries, raspberries, blackberries or grapes properly cultivated in Hudson County. Growers have pertinaciously held on to the miserable small varieties of strawberries and raspberries of twenty years ago,

which has defeated the few attempts at growing these fruits. I have also yet to see the first earnest attempt at grape culture. It is notorious that New-York is most inadequately supplied with the finer varieties of small fruits. Even the little that is seen is sent from immense distances—some of the best from Knox of Pittsburgh, over 400 miles from New York. This deficiency in the finer sorts of small fruits should be remedied.—*Tribune.*

Common Ivy.—Ivy is not a parasite as commonly supposed, but has its roots in the earth, and simply adheres to the trees or other props by which it is elevated into the air. If the thick stems, which may always be observed at the base, be cut through, it usually dies like any other plant. The diameter of these stems near the ground is often 10 or 12 inches, and many are often found standing side by side. The age attained by ivy is probably to be reckoned by centuries, for though often found trailing weakly upon the ground, bordering sylvan walks, and entangled in hedges, its true place is the time-worn and roofless abbey, and the crumbling middle-age castle, from the romance of which it is inseparable, and with the history of which it descends, making antiquity picturesque, and affording at the same moment a powerful physical protection. Some of the largest ivies in England are probably those at Brockley Hall, Somersetshire, where they brace up the old trees with their friendly clamps, rendering them at the same time, as is the wont of ivy, cheerful in winter; and for beauty there are none to be found grander than those of Kenilworth. The lower walls of this famous ruin they ornament with green and shining arabesque; and from the upper ones they roll out magnificently in rich and massive cornices. The variety in the leaves of ivy is often thought to indicate a difference of kind. But it is a variety connected merely with different stages of growth. While young, and as long as the stems have a wall or tree to attach themselves to, that is to say, closely, as if they were glued, inch by inch, the leaves are angular and three to five-lobed in innumerable variety; at this time also they are often beautifully tinctured with red or purple, or veined with white, or wholly yellow, especially on the terminal and zigzag branchlets that run like vegetable centipedes up trees and over the surface of damp walls and rocks. Mounting upwards by means of their root-like suckers, which are thrown out abundantly from the surface, the stems in due time reach the top of their support. They now elongate but little, becoming woody, and forming large bushy heads, which produce flowers and fruit, and the leaves of which are all ovate or elliptical, but still possessed of the characteristic polish, and with long petioles. Such leaves are produced only upon the branches that float into the air, when the plant is attached to trees or buildings; or that form a kind of edge along the top, when growing against an old wall; and it is only upon these, literally the very tops of the plants, that flowers and fruit are found. If the stem have suckers upon it, there are neither.—Examples are known of ivy ascending to the height of 100 feet before it becomes disengaged enough to blossom.—*Grindon's British and Garden Botany.*

Pedigree Wheat.—The following article is extracted from Vol. IX of *Once a Week:* The results of Mr. Hallet's experiments are very wonderful and very suggestive. We have condensed the original account, in some measure, but without any suppression of essential facts.

"A gentlemen, (Mr. Hallett) whose farm I very recently had the pleasure of seeing, in the immediate neighborhood of Brighton, showed me and my friends the results of his experiments in the growth of wheat and other cereals, and explained the reasons of his undertaking them.

With good, strong, plain sense, it struck Mr. Hallett, what every stock-breeder knows, that from the largest and best animals the best stock was produced.—With this idea in his head he felt convinced

that the principal might be applied to grain. As a stimulus to pursue his plan, he fortunately discovered that in the grains of one ear of wheat one grain is to be found greatly to excell all the others in productive power. Thus by carefully selecting the seeds from the best ear, (for there is always one best ear amongst the tillers, and as was remarked, one best grain in it,) the result has been a growth of wheat perfectly extraordinary. Year after year these best grains have been put into the ground.

Mr. Hallett's experiments and success are well illustrated by the following facts: A gardener in Scotland was struck with the appearance of a blossom on a Sweet-William in his garden. He carefully preserved the seeds from it, and the following year had a still better flower, the seeds from which he also preserved. In this way he went on, year after year, for fifteen years, when he produced flowers nearly as fine as auricalus. This was his *ne plus ultra*. Whether Mr. Hallett will improve on his present large ears and their yield remains to be seen.—We cannot but think his experiment will end where they now rest.

In the year 1857, the original ear was 4⅜ inches long and produced 47 grains. In the year 1861, the finest ear was 8¾ inches long and produced 123 grains, and also 80 tillers from one grain only. Thus by means of repeated selections alone, the length of the ears had been doubled and their contents nearly trebled, and the tillering power of the seed increased eight fold.

When we consider that eighty ears have sprung from one seed, some of which have from 16 to 18 sets up each side of it, this new development is little short of miraculous, and the product has been accomplished in five years by selection alone, and that on land which is, apparently, but little adapted for the growth of wheat. And what a sight presented itself when we viewed Mr. Hallett's large wheat fields and his selections in his garden! We shall never forget it. We have admired the blue sky, the calm lake, the sunny glade, the budding blossoms, and the beauteous flowers; we have wandered on the sides of purling brooks, and seen the foamy sea in all its glory; but never do we recollect being more struck with admiration, and even wonder, than when we beheld the fine crop of his cereals. We mention cereals, because we include his oats and barley, both of which exhibited not only an extraordinary growth, but an enormous yield, some of the stalks of oats being at least seven feet in height.

But to return to the crop of wheat. It waved its pendulous heads to the slight breeze that blew, each ear giving promise of great productiveness, and, as far as the eye could reach over the waving fields, each ear was of the same great unusual length. Nor was there any crowding of the plants. Ample room had been given for each, and the consequence was, that the tillers were in due proportion to the space given.—There was also a great saving in the quantity of seed wheat usually sown, and the one peck per acre, planted by Mr. Hallett, or one bushel on six acres, if sown in August, allowing nine inches every way for tillers. All this is a great consideration, as well as a great saving of seed. Indeed, dibbled in the way Mr. Hallett recommends, even to twelve inches apart, a half-peck of seeds has planted an acre of ground."

This principle of selection has been employed in this country, both in grains and vegetables and fruits, and doubtless very valuable results would be secured by patient and pains-taking experiments in all departments of horticulture.

Septennis Psoriasis.—Sidney Smith was once looking through the hot-house of a lady who was proud of her flowers, and used, not very acurately, a profusion of botanical names.

"Madam," said he "have you the *Septennis psoriasis?*"

"No," said she, "I had it last winter, and I gave it to the Archbishop of Canterbury; it came out beautifully in the spring."

Septennis psoriasis is the medical name for the seven years' itch.

TERRE HAUTE HORTICULTURAL SOCIETY.—Officers:

President—Hon. R. W. Thompson.
Vice-Pres.—A. B. Pegg.
Treasurer—J. A. Foote.
Secretary—Jas. Gilbert.
Organized May, 1865.

WISCONSIN STATE HORTICULTURAL SOCIETY.—Annual Circular, 1865.—Officers:

B. F. Hopkins, *President.*
L. P. Chandler, *1st Vice-President.*
J. C. Plumb, *Cor. Secretary.*
J. W. Rist, *Recording Secretary.*
F. C. Curtis, *Treasurer.*

CORRESPONDENCE.

EDITORS HORTICULTURIST,

I HAVE been giving more or less of time this season to a specialty, viz., the examination of grape soils, location, and modes of culture, training, &c. I am not prepared, as yet, to say much *pro* or *con*; but perhaps a little record of what I have seen and heard this season may be of use to you in making up the pages of the HORTICULTURIST from time to time.

My observations at this time, taken in connection with previous years, convince me that while grapes of some variety may be grown in any soil, and almost any locality, there are really but few localities, and a small territory of soil suited to growing of grapes for making a fine wine. I do not think that, as a whole, the class of wines now made and sold will be tolerated ten years hence, and, therefore, the grower of grapes, looking to their manufacture into wines for profitable sale, must study well the quality of grape requisite, and the components in soil that will supply those requisites. My present impression of the value of soils for growing wine grapes is about as follws:

1st. Calcareous limestone.
2d. Calcareous clay.
3d. Limestone clay.
4th. Clay loam.
5th. Gravelly loam.
6th. Sandy loam.

The first and second will grow and ripen fruit containing a less per centage of acid than the third and fourth, while the fifth and sixth are soils in which I question the practicability of growing any grape, and ripening it to form a wine without the addition of some foreign matter.

I know there are drift formations on some of the islands, and on the shores of Lake Erie, where the appearance is of a gravelly loam, and where the grape grows and apparently ripens well. I know, also, that it is believed by some that such drift formations contain within them materials to give all the requisites to good wine. I have yet to see the good wine, and, therefore, you may note that I leave out these localities in my estimate respecting gravelly loams. I wait to learn.

So much for soils. Now let me add that localities are best, as I now view the matter as follows: viz., 1st. Those abutting on large bodies of water, or where the prevailing cold winds of autumn and spring pass over the water, and within one mile of the vineyard.

2d. High hilly locations, where there are adjacent rivers or large ponds of water, and, as before, so placed that the cold winds of autumn and spring pass over the water and within half a-mile of the vineyard.

With the 1st or 2d class of soils, and either of the above locations—the land under-drained—profitable results may confidently be anticipated by the planter and grower of a vineyard, especially if bone meal and gypsum be added as a manure to the 2d class.

The territory abutting on the shores, and embraced in the Islands of Lake Erie, now devoted to grape culture, is probably over 5,000 acres. Of this 600 acres lay between Buffalo and Erie; 600 acres between Erie,

Pa., and Cuyahoga County in Ohio; 1,200 acres in Cuyahoga County; 200 acres in Loraine County; 700 acres in Erie County, exclusive of the Islands; 800 acres on Kelly Island, and 400 acres on South Bass, Middle Bass Peninsula, and parts of Ottawa County. The balance, 500 acres, we may safely assert, is to be found west of the territory here specified.

Of these 5,000 acres, three-fifths are probably Catawaba, two-fifths Isabella, and the remaining one-fifth made up of Delaware, Concord and other varieties. The distance apart in the largest proportion of the vineyards, I think, will be found six by eight feet; but nearly all recent plantings have been eight by eight and eight by ten feet. The crop this year will probably be on about 3,500 acres of the 5000, and will average, notwithstanding deductions to be made for rot and mildew, and the quantity of acres first year in bearing, say not far from two and one-half tons to the acre. This will give 17,500,000 lbs. which at an average price of seven cents per pound will be $1,225,000 or $350 per acre.

This is perhaps a low average, as there are quite a large number of acres on which from five to eight tons per acre will probably be gathered; but I prefer putting my estimates so that I can safely cover all the ground, as I then show a better return for capital invested than perhaps any other reliable and permanent interest will exhibit.

In connection with this, I want also to tell you that the Northern Ohio Grape Growers' Association will hold an exhibition of fruit, and meetings for discussion of qualities, at Sandusky on the 17th, 18th, and 19th of October; and that you, and all other Horticulturists, and especially grape-growers, are invited to attend.

Some other time, perhaps, I will write you my impressions relative to the times and modes of pruning, manner of cultivating, &c., &c.; but I think you have enough for the present. Yours truly,

F. R. Elliott.

Cleveland, Aug. 27, 1865.

Newburgh, N. Y., *Aug.* 20th, 1865.

Editors Horticulturist.

Gentlemen,—We have had the worst season heretofore known in this locality for "rot" and "mildew" of grape fruit and leaves. Broad Vineyards of Catawba rotted so badly as to show but few decent bunches, and to destroy three-fourths of the crop for any use. No other variety suffered such damage, and some kinds, and some soils produce an average crop.

The foliage of most of our newest sorts of "pot" grapes is more or less impaired; also, some mildew on their fruit occasionally.

Many persons took the bad advice "to trench two to three feet deep and enrich the border with well rotted manure before setting vines," and some carried the idea to the extreme of four or more feet with enriching to the bottom. Vines so planted have ever had mildew, and this season worse than ever; while some varieties of vines, grown in soil of moderate depth, not frequently stoned, have vines in good condition, and fine crops as ever before raised here, now ripening.

Very deep, rich soil, frequently forked over and soaking abundant drainage, ensures failure even with those best of grapes which require the richest borders of any hardy grapes grown here, viz: Allen's Hybrid and Delaware.

Adirondac, Allen's Hybrid, and Delaware vines have generally suffered the worst from mildew, because planters wishing to "pot" them have made extra preparation of soil, by deepening and enriching—hence the worst results.

Delaware Vineyards, three to five years, planted in proper soil, *not potted*, have, so far done finely, and the fruit is nearly ready for market. So Concord and Hartford on thin open soil, duly drained, have done as well as, or better than usual. Isabella, though generally injured by mildew on leaf, is promising fair. Rebecca, in suitable soil, very fine crop. Allen's Hybrid, properly planted, now have a splendid crop. Diana

never ripens here except on limestone debris, and rots badly in damp soil. Creveling is resisting disease very well and making good promises.

In short, bad as the season is, the right grape in the right soil, under right treatment is rewarding its owner well, while apples, pears, plums, peaches and cherries have failed almost entirely.

Yours, &c.,

——.

South Pass, Ill., Aug. 21st, 1865.

Editors of Horticulturist.

Will you or some experienced cultivator give a list, say six varieties (or less, if there be not so many) valuable to cultivate for market, of peaches, pears, plums and grapes. By doing so you will oblige

A Subscriber.

Some of us are getting "Grapes on the brain" here.

Will some of our subscribers who have experience in the cultivation of fruit in the above locality, please send us a list of varieties best suited to their climate.—Eds.

Olney, Ill., Aug. 12, 1865.

The Geranium is one of the most popular flowers, and it would no doubt gratify many of your readers to publish an article descriptive of its varieties, mode of culture, &c., and if possible suggest a good plan of keeping it over the winter without the necessity of a Green-house. Grapes are abundant here, although all varieties rot to some extent, except the Delaware. I have cultivated grapes for ten years, and of those growing on the side of my house I have never had any to rot or mildew. The iron scales, gathered from round a blacksmith's anvil, I have been in the habit of putting round my pear trees. I have never yet lost one by blight, and they bear abundantly.

Your's respectfully,

Samuel McClure.

Messrs. Editors:—

The remarks of your correspondent, "Harvard," upon my article in the August number of your journal, require an answer, which I will try to give without any of that pleasant "sarkasum," in which your correspondent seems to copy the great A. Ward. In regard to the Corydalis glauca, I admit that I made a serious blunder, but at the same time, I say that half the blame belongs to the accomplished chairman of the committee on flowers, who marked my specimens *C. Aurea*. In regard to the character of the other plants, and as to their being neglected, I simply affirm that I am very far indeed from being "singularly unfortunate in my choice of plants."

The Corydalis, Arum and Houstonia are mentioned in the transactions of the Massachusetts Horticultural Society for 1858, as being "sufficiently curious or showy to merit a place in every garden." My experience in cultivating wild flowers, and my good fortune in seeing them under cultivation, may be much more limited than that of "Harvard;" but never having seen the Dracœna, Corydalis, Arum, or Sarracenia cultivated outside of my own garden, I had a good right to call these, so far as my own observation went, "neglected flowers."

On the same ground, *i. e.*, my own experience, I repeat what I said in the article in question, viz: that the Sarracenia is impatient of removal. It has failed with me and with the only other cultivator whom I know to have tried it.

The Calypso was mentioned incidentally, more to call attention to it, and elicit some information if possible, than to class it strictly as a neglected flower.

It is a mere quibble to say that a plant is not neglected, (especially if it is a plant easily obtained,) because one amateur in five hundred happens to have a specimen in his garden.

My list of flowers was not made up

without some care, and apart from the mistake about Corydalis glauca, which now stands corrected, I cannot see that I have been careless, or done anything to mislead the readers of the HORTICULTURIST. Like Jack Bunsby, "What I says I stands to."

J. M. M., JR.

BOOKS, &c., RECEIVED.

PIONEERS OF FRANCE IN THE NEW WORLD, by Francis Parkman, author of "History of the Conspiracy of Pontiac," "Prairie and Rocky Mountain Life," etc.—Boston, Little, Brown & Co., Publishers.

In this series of Historical events, of which this volume is the first, and at the same time a distinct and independent work, we have two completed narratives; the first relating to the Huguenots in Florida, with a sketch of Huguenot colonization in Brazil; the second to Samuel de Champlain and his associates, with a view of earlier French adventure in America and the legends of the Northern Coasts. The care and research bestowed on this volume ranks it at once as a standard Historical work. Evidently no pains have been spared in exhausting every resource of information, and placing the same in a truthful, concise and entertaining form. Mr. Parkman is known to our readers as the author of the valuable articles on Hybridization and the Culture of the Rose.

THE Publication Committee of the Entomological Society of Philadelphia, purpose to publish, and issue gratuitously, an occasional bulletin, under the title of "THE PRACTICAL ENTOMOLOGIST," in which papers on the Insects injurious and beneficial to Vegetation will be given for the benefit of the American Farming interest. It is hoped that the information intended to be imparted through this medium, will be of use to the Agriculturists of this country,—a class which comprises the wealth and strength of the population of the United States,—by leading them to study critically the Entomological fauna which surrounds them, and to derive from their knowledge thus acquired, the power to increase the production of their crops and develop the interest which they represent.

DOMESTIC POULTRY.—Being a practical treatise on the preferable breeds of farm yard poultry, their history and leading characteristics, with complete instructions for breeding and fattening, and preparing for exhibition at poultry shows, &c. Derived from the author's experience and observation, by Simon M. Saunders. Very fully illustrated. Orange Judd, New York. Price in paper cover 30 cts., bound 60 cts., post paid.

HOP CULTURE.—Practical details from the selection and preparation of the soil, and setting and cultivation of the plants; to picking, drying, pressing and marketing the crop. Plain directions as given by ten experienced cultivators, residing in the best hop growing sections in the United States. Over forty engravings.—Orange Judd, New York. Post paid, forty cents.

MANUAL OF FLAX CULTURE.—Seven prize essays on the culture of the crop and on dressing the fibre, with other essays and statements, copious illustrations, and a glossary, all by practical flax growers of various parts of the United States, Canada, Ireland and Germany.—Orange Judd, New York, post paid 50 cents.

B. K. BLISS' AUTUMN CATALOGUE of Dutch and Cape Flowering Bulbs, for sale by Benjamin K. Bliss, Springfield, Mass. Price of Catalogue 10 cents.

VICKS' ILLUSTRATED CATALOGUE of Hardy Flowering Bulbs, and Guide to the Flower Garden for the Autumn of 1865.

SELECT LIST OF DUTCH BULBOUS ROOTS, imported and for sale by Henderson & Fleming, Seedsmen and Florists, 67 Nassau Street, New York.

PRICED CATALOGUE OF PLANTS, grown and for sale by E. Williams, Montclair, N. J.

ROYCE'S PRICE-LIST OF GRAPE VINES for 1865, with an address to those interested in Grape Cultivation. Dr. W. A. Royce, Newburgh, N. Y.

CATALOGUE, No. 4 — Genesee Valley Nurseries, Rochester, N. Y. Frost & Co's Wholesale Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, Bulbs, &c., for Autumn of 1865.

BRIDGEPORT NURSERY TRADE LIST OF VINES for Autumn, 1865 and Spring, 1866. John W. Hinks & Co., Bridgeport, Conn.

LAKE SIDE NURSERY, Madison, Wisconsin.—J. C. Plumb's Descriptive Price-List of select fruit, Evergreen and Deciduous Trees, Vines and Shrubs adapted to the North-west.

REID'S NURSERIES.—Catalogue for 1865 and '66 of Fruit and Ornamental Trees, Flowering Shrubs, etc., cultivated and for sale by David D. Buchanan, successor to the late Wm. Reid, Elizabeth, N. J.

VINELAND GRAPE NURSERY, Vineland, N. J.—J. W. Cone Proprietor. Price-List for fall of 1865.

KNOX'S FRUIT FARM AND NURSERIES.—J. Knox, Box 155, Pittsburgh, Penn. Price list of small fruits, &c. for the fall of 1865.

1865 & 1866.—WHOLESALE CATALOGUE of J. M. Jordan's Nursery on Grand Ave., St. Louis, Mo.

WHOLESALE PRICE-LIST for the Autumn of 1865 and Spring of 1866. Bronson, Graves & Selover, of the Washington Street Nurseries, Geneva, N. Y.

WHOLESALE PRICE-LIST of the West Avenue Nurseries for 1865-6. A. C. & G. T. Fish, Proprietors, Rochester, N. Y.

PRICE-LIST OF VINES for fall of 1865. Chas. H. Zundell, Hempstead, Queen's County, N. Y.

RYDER & Co's ANNUAL CATALOGUE AND PRICE-LIST OF GRAPE VINES for 1865, Sing Sing, N. Y.

SELECT CATALOGUE of Fruit and Ornamental Trees, Vines, Shrubs, &c., cultivated and for sale at the Bridgeport Nursery, Fairfield Co., Conn., by J. W. Hinks & Co.

DESCRIPTIVE CATALOGUE of Fruit and Ornamental Trees, Shrubs, Vines, Roses and Exotic Plants, cultivated and for sale at the Commercial Garden and Nursery of Parsons & Co., Flushing, Long Island, near New York,

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J. F. DELIOT, ANNUAL CATALOGUE AND PRICE-LIST of Grape Vines for 1865-6. Sing Sing, N. Y.

TRANSACTIONS of the Indiana State Horticultural Society at its Fourth Annual Meeting, held at Indianapolis, January 3d, 4th and 5th, 1865.

TWELFTH REPORT of the Ohio Pomological Society, embracing the annual meeting for 1864, held at Painesville in December 1864, and of the *ad interim* Committee at Cincinnati, Pittsburgh, etc., in 1864.

JOHN W. BAILEY'S Trade-list of Grape Vines for Autumn, 1865, Plattsburgh, N.Y.

Grape Cuttings from History, and several other valuable articles, in type, will appear in the November number.